SUPPORT FOR THE AMENDMENT

This Amendment cancels Claim 10; and amends Claims 4-9. Support for the amendments is found in the specification and claims as originally filed. In particular, support for a "Young's modulus of 90 GPa or more" and for a "coefficient of linear thermal expansion of $18x10^{-6}$/°C or less" is found in the specification at least at [0019]. Support for "1-3.5%" of manganese is found in the specification at least at Table 1. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 4-9 will be pending in this application. Claims 4, 5, 6, 7, 8 and 9 are independent.

REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

The present invention provides an aluminum alloy for casting members such as ladder frames and cases for automobiles. The alloy exhibits a high Young's modulus of 90 GPa or more, a low linear thermal expansion coefficient of $18x10^{-6}$/°C or less, and a lack of sticking to a casting die. Specification at [0001]; [0019]; [0022].

Claims 4-7 and 10 are rejection under 35 U.S.C. § 103(a) over U.S. Patent No. 4,919,736 ("Nishi"). Claims 5 and 7-9 are rejected under 35 U.S.C. § 103(a) over JP 2000-204428A ("Horikawa").

Nishi discloses an aluminum alloy for abrasion resistant die castings. Nishi at abstract.

Horikawa discloses a die cast piston that excels in fatigue strength at high temperature and antiwear quality. Horikawa at English-language abstract.

Any *prima facie* case of obviousness based on the cited prior art is rebutted by the significant improvement in Young's modulus to 90 GPa or more, linear thermal expansion coefficient to $18x10^{-6}/°C$ or less, and reduced sticking to a die over the ranges featured in the claims of "1-3.5% by mass of manganese" and "0.5-3% by mass of iron". This is demonstrated in the specification at Table 1, reproduced below.

[Table 1]

No.		Composition (wt%)													Characteristics	
		Si	Cu	Ni	Fe	Mn	Mg	Cr	Ti	B	V	Zr	Mo	P	E (GPa)	α ($\times10^{-6}/°C$)
1	Compositions According to the Present Invention	13	5	3	2	1	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	96	17.8
2		24	5	3	2	1	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	103	14.6
3		16	3	3	2	1	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	96	17.2
4		16	7	3	2	1	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	100	16.7
5		16	5	1	1	1	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	93	17.5
6		16	5	3	2	2	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	98	17.0
7		16	5	6	2	3.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.01	106	16.4
8		16	5	1	1	1	1.5	1.0	1.0	1.0	1.0	1.0	1.0	0.01	98	16.9
9		16	5	–	2	2	–	0.4	–	–	–	–	–	0.01	92	17.8
10		16	5	–	2	2	0.5	0.4	–	–	–	–	–	0.01	92	17.8
11		16	5	–	2	2	–	0.4	–	0.4	–	–	–	0.01	94	17.7
12		16	5	–	2	2	–	0.4	0.4	–	–	–	–	0.01	93	17.7
13		16	5	–	2	2	–	0.4	–	–	0.4	–	–	0.01	93	17.7
14		16	5	–	2	2	–	0.4	–	–	–	0.4	–	0.01	94	17.7
15		16	5	–	2	2	–	0.4	–	–	–	–	0.4	0.01	94	17.7
16		14	4	2	2.5	1.2	–	0.5	0.5	–	0.5	–	–	0.01	94	17.6
17		16	5	–	2	2	0.5	–	–	–	–	–	–	0.01	90	17.9
18	Comparative Examples	12	1	1	1	0.5	1	–	–	–	–	–	–	–	80	20.0
19		11	2.5	–	0.8	0.2	0.2	–	–	–	–	–	–	–	78	21.0
20		16	5	0.5	1	0.5	0.5	0.4	–	–	–	–	–	0.01	87	17.9
21		16	5	2	–	2	–	0.4	–	–	–	–	–	0.01	91	17.8
22		16	5	2	2	–	–	0.4	–	–	–	–	–	0.01	–	17.4
23		16	1	–	2	2	–	0.4	–	–	–	–	–	0.01	86	18.5
24		12	5	–	2	2	–	0.4	–	–	–	–	–	0.01	88	18.9

Examples 1-17 and Comparative Examples 18-20 in Table 1 show that the present invention provides the improved combination of higher Young's modulus and lower coefficient of linear thermal expansion when the alloy contains 1-3.5% by mass of manganese.

Furthermore, the specification at [0022] states

> Alloy No. 21 satisfies the criteria for Young's modulus and coefficient of linear thermal expansion [of the present invention], but caused ***sticking*** to the die. The cause is thought to be the fact that **iron was not substantially added**, and this did not satisfy the conditions described above. Specification at [0022] (emphasis added).

Thus, the present invention provides significantly higher Young's modulus, lower coefficient of linear thermal expansion, and less sticking to a die over the over the ranges featured in the claims of "1-3.5% by mass of manganese" and "0.5-3% by mass of iron".

The cited prior art fails to suggest this combination of features.

Thus, any *prima facie* case of obviousness based on the cited prior art is rebutted. Therefore, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Applicants respectfully request that the Examiner acknowledge receipt of a certified copy of the priority document.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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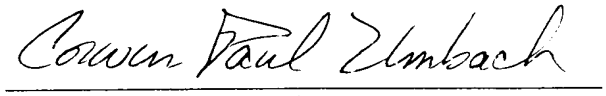

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